

Application No.: 09/656,677

Docket No.: 65229-0010/GP-301542

IN THE CLAIMS

Claims 21, 36, 40, and 41 are amended herein. A complete listing of the currently pending claims is as follows:

1. (Original) A method for designing and building a manufacturing system during a system design, procurement and implementation process, comprising the steps of:
reviewing a manufacturing system design according to design review data corresponding to a specification for the manufacturing system;
conducting an activity-focused assessment of the manufacturing system design; and
validating the manufacturing system based on results from the activity-focused assessment after the manufacturing system has been implemented.
2. (Original) The method of claim 1, wherein the reviewing step is conducted a plurality of times throughout the manufacturing design, procurement and implementation process.
3. (Original) The method of claim 2, wherein the reviewing step includes the steps of:
conducting a first design review at a pre-design stage;
conducting a second design review at a detailed design stage, wherein the second design review is conducted after a manufacturing system supplier has been selected; and
conducting a third design review after the manufacturing system has been built.
4. (Original) The method of claim 1, wherein the design review data is in the form of at least one of a common analysis template and a system-specific analysis tool.
5. (Original) The method of claim 4, further comprising the step of updating at least one of the common analysis template and the system-specific analysis tool during the reviewing step.

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6. (Original) The method of claim 1, wherein the conducting step includes the steps of:
- identifying activities associated with the manufacturing system;
 - identifying consequences associated with each activity;
 - pairing associated activities and consequences into activity/consequence pairs;
 - evaluating each activity/consequence pair based on predetermined assessment criteria; and
 - selecting an action for each activity/consequence pair.
7. (Original) The method of claim 6, wherein the assessment criteria corresponds to at least one system concern selected from the group consisting of reliability, quality, and health/safety.
8. (Original) The method of claim 6, wherein the validating step includes the steps of:
- comparing an actual action for each activity/consequence in the manufacturing system with its associated action from the selecting step; and
 - taking corrective action if the actual action does not match the action from the selecting step.
9. (Original) The method of claim 1, wherein the validating step includes the steps of:
- comparing discrete areas of the manufacturing system with the results from the activity-focused assessment step; and
 - taking corrective action if any of the discrete areas do not match the results from the activity-focused assessment step.
10. (Original) A method for designing and building a manufacturing system, comprising the steps of:
- reviewing a manufacturing system design based on design review data corresponding to a specification for the manufacturing system;
 - identifying activities and consequences corresponding to the design analysis data that are associated with the operation and maintenance of the manufacturing system;

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generating individual activity/consequence pairs by matching each activity with at least one associated consequence;

generating an action for each individual activity/consequence pair;

building the manufacturing system based on the design analysis data from the identifying step and the actions from the generating step;

and validating the presence of the actions in the manufacturing system based on the design analysis data and the actions.

11. (Original) The method of claim 10, wherein the reviewing step is conducted at a first time at a pre-design stage, a second time at a detailed design stage, and a third time after the manufacturing system has been built.

12. (Original) The method of claim 11, wherein the method further comprises reviewing an alternative design approach during at least one of the pre-design stage and the detailed design stage.

13. (Original) The method of claim 10, wherein the design analysis data is stored in at least one of a common analysis template and a program-specific analysis tool.

14. (Original) The method of claim 13, wherein at least one of the common analysis template and the program specific analysis tool obtains information from a global specification having core design requirements.

15. (Original) The method of claim 13, wherein the common analysis template includes "best practices" information.

16. (Original) The method of claim 10, wherein the step of generating an optimized action includes the steps of:

evaluating each activity/consequence pair by considering at least one of a plurality of evaluation questions.

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17. (Original) The method of claim 16, further comprising the step of analyzing the information obtained from the evaluating step and selecting a solution according to a hierarchy of possible actions, wherein the hierarchy ranks possible solutions from most optimal to least optimal.
18. (Original) The method of claim 17, wherein the analyzing step is conducted using software.
19. (Original) The method of claim 10, further comprising the step of generating a activity-focused assessment summary listing the action associated with each individual activity/consequence pair from the generating step.
20. (Original) The method of claim 19, wherein the validating step includes checking the manufacturing system with the optimized actions in the activity-focused assessment summary to confirm that the optimized actions have been incorporated into the system.
21. (Currently Amended) A computer readable storage device used to design and build a manufacturing system, comprising:
a design analysis tool that includes design analysis data documenting optimized practices for the manufacturing system with respect to at least one system concern; and
an activity-focused assessment tool that evaluates a plurality of activity/consequence pairs and generates an optimized action corresponding to each individual activity/consequence pair.
22. (Original) The computer readable storage device of claim 21, wherein the design analysis data in the design analysis tool is a list of criteria corresponding to manufacturing system requirements described in a global specification.
23. (Original) The computer readable storage device of claim 21, wherein the activity-focused assessment tool generates an action for each activity/consequence pair based on a hierarchy of preferred actions.

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24. (Original) The computer readable storage device of claim 21, wherein the activity-focused analysis tool generates an action summary listing the activity/consequence pairs and the action associated with each individual activity/consequence pair.

25. (Original) A computer readable storage device used to design a manufacturing system, comprising a design analysis tool that includes design analysis data documenting optimized practices for the manufacturing system with respect to at least one system concern, wherein the design analysis data in the design analysis tool is a list of criteria corresponding to manufacturing system requirements described in a global specification.

26. (Original) A computer readable storage device used to design a manufacturing system, comprising an activity-focused assessment tool that evaluates a plurality of activity/consequence pairs with respect to at least one system concern and generates an action corresponding to each individual activity/consequence pair, wherein the activity-focused assessment tool generates an action for each activity/consequence pair based on a hierarchy of preferred solutions.

27. (Original) The computer readable storage device of claim 26, wherein the activity-focused assessment tool generates an action summary listing the activity/consequence pairs and the action associated with each individual activity/consequence pair.

28. (Original) A method for designing and building a manufacturing system during a system design, procurement and implementation process, comprising the steps of:

reviewing a manufacturing system design according to safety design analysis data corresponding to a specification for the manufacturing system;

conducting an activity-focused risk assessment of the manufacturing system design based on safety criteria; and

validating the manufacturing system based on results from the activity-focused risk assessment after the manufacturing system has been implemented.

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29. (Original) The method of claim 28, wherein the reviewing step is conducted a plurality of times throughout the manufacturing design , procurement and implementation process.

30. (Original) The method of claim 29, wherein the reviewing step includes the steps of:

- conducting a first safety design review at a pre-design stage;
- conducting a second safety design review at a detailed design stage, wherein the second design review is conducted after a manufacturing system supplier has been selected;
- and
- conducting a third safety design review after the manufacturing system has been built.

31. (Original) The method of claim 28, wherein the safety design review data is in the form of at least one of a common safety analysis template and a system-specific safety design analysis tool, wherein the safety design analysis tool includes system-specific safety criteria corresponding to the specification for the manufacturing system.

32. (Original) The method of claim 31, further comprising the step of updating at least one of the common safety analysis template and the system-specific safety design analysis tool during the reviewing step.

33. (Original) The method of claim 32, wherein the conducting step includes the steps of:

- identifying tasks associated with the manufacturing system;
- identifying hazards associated with each task;
- pairing associated tasks and hazards into task/hazard pairs;
- evaluating each task/hazard pair based on predetermined risk assessment criteria; and
- selecting an action for each task/hazard pair.

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34. (Original) The method of claim 33, wherein the validating step includes the steps of:

comparing an actual action for each task/hazard in the manufacturing system with its associated action from the selecting step; and

taking corrective action if the actual action does not match the action from the selecting step.

35. (Original) The method of claim 28, wherein the validating step includes the steps of:

comparing discrete areas of the manufacturing system with the results from the activity-focused risk assessment step; and

taking corrective action if any of the discrete areas do not match the results from the activity-focused risk assessment step.

36. (Currently Amended) A computer readable storage device used to design and build a manufacturing system based on safety criteria, comprising:

a safety design analysis tool that includes safety design analysis data documenting optimized safety practices for the manufacturing system; and

a task-based risk assessment tool that evaluates a plurality of task/hazard pairs and generates an optimized action corresponding to each individual task/hazard pair.

37. (Original) The computer readable storage device of claim 36, wherein the safety design analysis data in the safety design analysis tool is a list of criteria corresponding to safety-related manufacturing system requirements described in a global specification.

38. The computer readable storage device of claim 36, wherein the activity-focused risk assessment tool generates an action for each task/hazard pair based on a hierarchy of preferred solutions.

39. (Original) The computer readable storage device of claim 36, wherein the activity-focused risk assessment tool generates an action summary listing the task/hazard pairs and the action associated with each individual task/hazard pair.

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40. (Currently Amended) A computer readable storage device used to design and build a manufacturing system, comprising:

a safety design analysis tool that includes safety design analysis data documenting optimized safety practices for the manufacturing system,

wherein the safety design analysis data in the design analysis tool is a list of criteria corresponding to safety related manufacturing system requirements described in a global specification.

41. (Currently Amended) A computer readable storage device used to design and build a manufacturing system, comprising:

an activity-focused risk assessment tool that evaluates a plurality of task/hazard pairs and generates an action corresponding to each individual task/hazard pair,

wherein the activity-focused risk assessment tool generates an action for each task/hazard pair based on a hierarchy of preferred solutions.

42. (Original) The computer readable storage device of claim 41, wherein the activity-focused risk assessment tool generates an action summary listing the task/hazard pairs and the action associated with each individual task/hazard pair.